GWF - Construction Site Modeling Emissions

Construction Maximum Total Hourly Emission Rates

TAIL PIPE EMISSIONS ("EXHAUST")	NO_x		CO		PM_{10}		SO_2	
	(lb/hr)	(g/s) [1]	(lb/hr)	(g/s) [1]	(lb/hr)	(g/s) [1]	(lb/hr)	(g/s) [1]
Sitework (Earthwork and Civil) Equipment Construction Emissions								
Maximum Hourly	2.6	0.323	11.8	1.492	----	----	0.21	0.026
Maximum 3-Hour [2]	----	----	----	----	----	----	0.21	0.026
Maximum 8-Hour [2]	----	----	11.8	1.492	----	----	----	----
Maximum 24-Hour [3]	----	----	----	----	0.17	0.021	0.18	0.023
Annual [4]	0.78	0.098	----	----	0.07	0.0090	0.07	0.009
Erection Support Equipment Construction Emissions								
Maximum Hourly	25.1	3.164	24.0	3.028	----	----	2.49	0.314
Maximum 3-Hour [2]	----	----	----	----	----	----	2.49	0.314
Maximum 8-Hour [2]	----	----	24.0	3.028	----	----	----	----
Maximum 24-Hour [3]	----	----	----	----	1.44	0.181	2.08	0.262
Annual [4]	9.20	1.159	----	----	0.64	0.081	0.89	0.112
TOTAL EMISSIONS (used as model input)								
Maximum Hourly	27.7	3.486	35.9	4.520	----	----	2.7	0.340
Maximum 3-Hour [2]	----	----	----	----	----	----	2.7	0.340
Maximum 8-Hour [2]	----	----	35.9	4.520	----	----	----	----
Maximum 24-Hour [3]	----	----	----	----	1.6	0.203	2.3	0.285
Annual [4]	10.0	1.257	----	----	0.7	0.089	1.0	0.121

FUGITIVE DUST EMISSIONS (Onsite Construction)	PM_{10} (lb/hr)	PM_{10} (g/s) [1]
Construction Dust (PM_{10}) Emissions- Plant Site		
Maximum 24-Hour [5]	0.58	0.073
Construction Dust (PM_{10}) Emissions - Plant Site		
Annual [6]	0.33	0.042

[1] Grams per second (g/s) = lbs/hr * 0.126

[2] 3-hour Lbs/Hr and 8-hour Lbs/Hr = Maximum Lbs/Hr

[3] 24-hour lbs/hr = Maximum daily PM_{10} emissions (lb/day) divided by 24 hours.

[4] Annual Tail Pipe (Exhaust) Lbs/Hr = Annual emissions (TPY) * (2000 hrs/yr) * (1 yr/8760 hours).

[5] 24-hour fugitive dust emissions are based on 7.33 lbs/acre/day (0.11 ton/acre/month) (Midwest Research Institute 1996) PM_{10}, 10-hour workdays and 50% control efficiency.

[6] Annual fugitive dust emissions are based on 8 months disturbance, assume one half of the plant site disturbed at any given time, 6 days per week, 10-hour workdays and assume a 50% control efficiency.

Construction Activities Emission Rates - Model Input

TAIL PIPE EMISSIONS ("EXHAUST")	NO_x [5] (g/s)	CO [5] (g/s)	PM_{10} [5,6] (g/s)	SO_2 [5,6] (g/s)
Sitework (Earthwork and Civil) Equipment Construction Emissions				
Maximum Hourly	0.054	0.249	----	0.0040
Maximum 3-Hour	----	----	----	0.0040
Maximum 8-Hour	----	0.249	----	----
Maximum 24-Hour	----	----	0.0040	0.0040
Annual	0.016	----	0.0020	0.0020
Erection Support Equipment Construction Emissions				
Maximum Hourly	0.527	0.505	----	0.052
Maximum 3-Hour	----	----	----	0.052
Maximum 8-Hour	----	0.505	----	----
Maximum 24-Hour	----	----	0.030	0.044
Annual	0.193	----	0.014	0.019
TOTAL EMISSIONS (used as model input)				
Maximum Hourly	0.581	0.753	----	0.057
Maximum 3-Hour	----	----	----	0.057
Maximum 8-Hour	----	0.753	----	----
Maximum 24-Hour	----	----	0.034	0.048
Annual	0.210	----	0.015	0.020

FUGITIVE DUST EMISSIONS [2]	PM_{10} (g/s)
Construction Dust (PM10) Emissions- Plant Site	
Maximum 24-Hour	0.073
Construction Dust (PM10) Emissions - Plant Site	
Annual	0.042

[1] For modeling purposes, the tailpipe ("Exhaust") emissions were split evenly between four point sources.

[2] Fugitive dust PM_{10} emissions were modeled as a single volume source within the proposed plant construction site.